

Aviation Education News



Distributed Quarterly to Promote Aviation Education and Awareness in Virginia

November 2000

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Enter the 2001 International Aviation Art Contest.

Richmond Airport Career Day

The seventeenth annual Rotary Aviation Career Day at Richmond International Airport took place on Thursday, October 19, 2000. The format consisted of presentations, facility

and operations tours of the airport, aircraft static displays, and aviation equipment and information displays. The featured speakers this year were representatives of Delta Air Lines.

Rotary Aviation Career Day, sponsored by several local Rotary Clubs with cooperation and support from the aviation and school communities and the Federal Aviation Administration, gives interested young people from high schools across the area an opportunity to learn more about aviation careers.



Virginia Department of Aviation exhibit on display in the Richmond Jet Hangar.

Accomack Airport "Airfest" -



Virginia Department of Aviation personnel staff a handout table in front of the agency's King Air 200



A NASA C-130 on display at Airfest. Visitors took turns touring the transport.

Airfest, which took place at Accomack County Airport on Saturday, October 21, 2000, was blessed with absolutely perfect weather for an aircraft fly-in. Crystal clear blue skies, light winds, and comfortable temperatures in the 70's greeted visitors.

Even with several conflicting events occurring nearby, the paved aircraft parking area at Accomack was nearly full of transient aircraft of all types.

Local visitors, some of whom had rarely, if ever, visited the airport previously, enjoyed the opportunity to look at aircraft and talk with the pilots, visit various vendors of products and food, and in the afternoon enjoy an airshow featuring a Coast Guard rescue helicopter and Virginia-based air show pilots John Greenwood and Charlie Kulp.

Aviation Education Careers Project

For the past year, the Virginia Department of Aviation has been preparing an Aviation Careers Package for distribution to Virginia's schools. The project is now nearly complete so be sure to check out the February edition of the VASEF Newsletter for all the details.

PRESIDENT'S NOTES

The NASA Langley Research Center's Office of Education (OEd) is working in collaboration with the Virginia Department of Aviation which is an excellent way to maintain two communication between federal and state aviation education concerns.

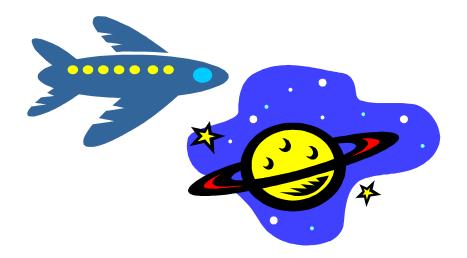
NASA is anticipating providing two teacher workshops, a 2-week NASA Education Workshop (NEW) for kindergarten through 6th grade (K-6) (6/17-30/01) & a 2-week NEW rural initiative (7/8-20/00). The first day of each program is conducted at a Fixed Base Operation "Flight School". Last year the professionals at Cardinal Pilot Shop (Mr. Roger Leonard) at the Newport News - Williamsburg Airport were kind enough to provide a truly exceptional program for each. I am anticipating working with him and his professional instructors again for the on-coming year.

I have included the principles of flight into these programs as a vehicle for the teachers to experience first-hand, the principles of aeronautics so they could strengthen the mathematics and science skills of their students by using flight as a "hook" to catch and hold the attention of their students. These programs are open to public and private school teachers in the elementary, middle and high school grades.

An application is available on the web at http://education.nasa.gov/NEW or email new@nsta.org. The date that applications will be due is tentatively February 20, 2001.

We are also conducting three 2-week pre-service NEW workshops (Pre-Service Teacher Program) for teacher candidates from colleges and universities. For information on the Pre-Service Programs go to http://edu.larc.nasa.gov/pstp) There will be a total of 50-teachers and 60-teacher candidates that will be participating.

Peter D. Thomas (Old Dominion University Research Foundation) Office of Education NASA Langley Research Center



VASEF AVIATION EDUCATION NEWS

is published quarterly in support of aviation education in the Commonweath of Virginia by the Virginia Department of Aviation.

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VASEF PURPOSE

The Forum is a non-profit organization to promote and foster aviation and space education among public and private schools, colleges and universities, and community and civic groups, and to promote increased public understanding of aviation and space and their economic, social, and career values in our society and in the Commonwealth of Virginia.

The NASA "Why" Files

The NASA "Why" Files is a series of four, standards-based instructional videos for grades 3-5 that introduces students to science as inquiry, the scientific method, and problem-based learning.

Each program supports the national math, science, and technology standards and includes:

- •a 60-minute video divided into four, 15-minute "teachable" episodes
- •a companion teacher guide
- •a web-based component
- •classroom activities
- •virtual field trips
- •classroom mentor
- •NASA programs, projects, facilities, and researchers

The NASA "Why" Files can be viewed on PBS-member stations, downlinked from satellite, on the Internet, and are available on video.

The series is free to registered educators. To register and for more information visit

http://whyfiles.larc.nasa.gov.

Programs in the 2000-2001 Series:

Program 1: The Case of the Unknown Stink

Wednesday, October 11, 2000, 11 a.m. - noon ET

In this program, students are invited to actively join the tree house detectives as they investigate the "Case of the Unknown Stink." The tree house detectives accept the challenge of trying to find the source of an unpleasant odor that is invading the surrounding neighborhoods. To determine the source of the stink, our detectives learn about the sense of smell: what it is; how humans and animals smell, and how wind speed and direction influence the movement of odor. They also learn about how NASA's Atmospheric Science research can help solve the case. While investigating the case, the tree house detectives learn that the source of the "unknown stink" is "right under their very noses."

Program 2: The Case of the Barking Dogs

Wednesday, November 8, 2000, 11 a.m. - noon ET

In this program, students are invited to actively join the tree house detectives as they investigate the "Case of the Barking Dogs." The tree house detectives accept the challenge of determining why dogs in the surrounding neighborhoods have unexpectedly started barking early in the morning and late at night. Using scientific inquiry, our detectives discover what is causing the neighborhood dogs to bark. In determining "why," the detectives learn about sound: what it is, how it is transmitted, and how humans and animals hear. While solving the case, the tree house detectives learn that determining the source of the barking requires the use of logic and "sound" reasoning.

Program 3: The Case of the Electrical Mystery

Wednesday, February 14, 2001, 11 a.m. - noon ET

In this program, students are invited to actively join the tree house detectives as they investigate "The Case of the Electrical Mystery." The tree house detectives are baffled: "Why is the electricity on in the tree house and why is the electricity off in all the houses on their block? They accept the challenge to solve the problem of the "electrical mystery." Using scientific inquiry, our detectives determine the cause of the neighborhood "electrical mystery." In solving the case, our detectives learn about electricity and how it si generated; they also learn about electrical current, circuits, and distribution. While solving the case, the tree house detectives discover that the "electrical mystery" is not simply and "open" and "closed" case.

Program 4: The Case of the Challenging Flight

Wednesday, March 14, 2001, 11 a.m. - noon ET

In this program, students are invited to actively join the tree house detectives as students from a rival school challenge them to compete in a flying contest. The tree house detectives accept their rival's challenge to compete in the "design it, build it, and fly it" competition. Using scientific inquiry, our detectives use what they've learned to design and build an "egg-tra-ordinary" flying machine.

VASEF Aviation Education News

NASA Educational Workshops

NASA Educational Workshops (NEW) model the integration of the national standards of mathematics, science and technology. They provide teachers with an opportunity to observe NASA's state-of-the-art research and development through direct interaction with NASA scientists, engineers, technicians and educational specialists at NASA Field Centers. Translation activities are incorporated into the workshop to help teachers adapt their new content knowledge, experience and materials into their specific educational situations.

Selected participants will spend two weeks in the summer at one of NASA's Centers. Travel expenses, housing, and meals are included as part of the program. Graduate credit is available. The two-week workshops will occur during mid-June through mid-August. Participants will be notified by April 15th of their NASA Center assignments and dates.

Eligibility

All applicants must:

- •be citizens of the United States;
- •be certified;
- •instruct full time in public or private schools in the U.S., the U.S. territories, Department of Defense Dependant Schools, Department of State Overseas Schools, or Bureau of Indian Affairs Schools;
- •have a minimum of three years teaching experience;
- •instruct at the K-6 grade levels; or
- •instruct mathematics, science, or technology at the K-12 grade level; or
- •serve students at the K-12 grade level as a media specialist, resource teacher, curriculum specialist, or counselor with a special interest in mathematics, science, or technology;
- •submit the original and two copies of the entire application package; Parts A and B (I-IV). Must be received by NSTA no later than February 20. Applications may be obtained at:

http://www.nsta.org/programs/new.htm

The National Congress on Aviation and Space Education

The 2001 National Congress on Aviation and Space Education is scheduled for March 14-17 at the Hyatt Regency Hotel in Minneapolis, Minnesota.

Overview:

The National Congress on Aviation and Space Education is one of the nation's most enduring aviation education experiences. For over thirty years, educators have attended to learn more about flight and how aviation concepts can be integrated into a variety of academic subjects.

They are offered opportunities for professional development and a chance to interact both with their peers and with aviation (and space) professionals from across the nation.

Enthusiastic educators leave with the tools to go back to their classrooms and share what they have learned with their students.

Sponsored by the Civil Air Patrol (CAP), the Congress is a unique event open to teachers at all grade levels.

Agenda:

The Congress features nationally known speakers from education, industry, and aviation and space. Confirmed speakers for the 2001 Congress include aviator Dick Rutan (who flew around the world nonstop in Voyager) and retired Colonel Gail Halvorsen (the Berlin Candy Bomber).

Hands-on breakout sessions are conducted by master teachers. These cover many different areas related to science, math, and technology education. They offer attendees the opportunity to try-out an activity and learn from the educator who actually developed the program. The resource materials that are distributed at these sessions are invaluable!

An exhibit hall features aviation education resources from many different organizations and companies.

Several very prestigious aviation education awards are presented at the National Congress including: induction into the Crown Circle for Aerospace Education Leadership, the A. Scott Crossfield Aerospace Education Teacher of the Year, the annual Brewer Trophy, and the Dr. Mervin K. Strickler, Jr. Aviation Education Leadership Award.

Who Should Attend:

The National Congress is open to anyone with an interest in aviation education and in using aviation to motivate students. Teachers with little previous knowledge about aviation will benefit as well as those who have a great deal of previous experience but want to know what's on the horizon for the future.

Because of the variety of breakout sessions and the emphasis on showcasing cutting edge technology, there is always something to interest educators at all experience levels.

And membership in the Civil Air Patrol is not necessary to participate. While the Congress is sponsored by CAP, it is held for the benefit of educators.

How Do I Find Out More:

Visit the Civil Air Patrol web site at www.capnhq.gov and select Conferences to view information about the next National Congress.

You can also contact the new Middle East Region Director for Aviation Education:

Claudine M. Sayegh 1609 Brookley Avenue Andrews AFB, MD 20762-5000 (240) 857-0166 merdae@msn.com



National Air and Space Museum Calendar

Tuesday, November 21, 2000

Curators Choice

"James H. Wyld: American Rocket Pioneer"
Join curator Frank Winter as he leads an informal discussion on the famed American rocket pioneer, James H. Wyld. Meet Frank at the Museum Seal in Milestones of Flight, Gallery 100 at noon.

Saturday, November 25, 2000

Monthly Star Lecture

"The History of the Universe in 60 Minutes or Less"

Astronomer and author Eric Schulman will conduct an hour-long slide presentation that details the history of the Universe. Schulman is the author of A Briefer History of Time. The show will be followed by a discussion with the audience and a book signing. NOTE: Public telescope observing will follow any Monthly Star Lecture, weather permitting. During some months public telescope observing may be omitted due to late sunsets. 6:00 p.m. Albert Einstein Planetarium.

Tuesday, November 28, 2000

"Iridium: Innovation in an Unforgiving World" Curator Martin Collins provides a brief overview of the Iridium communications satellite project and the Museum's own Motorola-Iridium artifacts. The talk will cover the Iridium's origins, development, and eventual collapse as a business, as well as the changing face of satellite communications in the 1990s. Meet Martin at the Museum Seal in Milestones of Flight, Gallery 100 at noon.

Thursday, November 30, 2000 Free Planetarium Program

Curators, researchers and astronomers gather every Thursday at 12:20 p.m. in the Einstein Planetarium to discuss the latest developments in astronomy and space exploration. Each Thursday a new topic will be discussed. This ongoing program is free and open to the public. *Einstein Planetarium*.

Thursday, November 30, 2000

General Electric Aviation Lecture Series Boots Blesse: "The Air War in Korea"

In honor of the 50th anniversary of the Korean War, the National Air and Space Museum presents a lecture by Major General C. "Boots" Blesse. General Blesse flew two combat tours during the Korean conflict, completing a total of 67 missions. During his second tour, he was officially credited with shooting down nine MiG-15s and one LA-9. In 1952, he was considered America's leading jet ace. *Langley IMAX Theater, 7:30 p.m.*

Paul E. Garber Preservation, Restoration, and Storage Facility

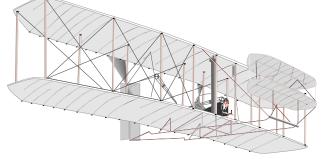
Get a behind-the-scenes look at the restoration workshop in Suitland, Maryland, where skilled craftsmen restore aircraft, satellites, and flight-related artifacts. Free tours last approximately three hours. 10:00 a.m., Monday through Friday; 10:00 a.m. and 1:00 p.m. Saturday and Sunday. For reservations, call (202) 357-1400 (voice) or (202) 357-1505 (TTY).

For general information call (202) 357-2700 (voice) or (202) 357-1729 (TTY).

Centennial of Flight

It is difficult for most of us alive today to conceive of a time when we could not fly.

Today, when we travel for business or go to visit our family members living hundreds of miles away, we simply call a travel agent or airline and book a flight.



The fact that the first powered, controlled flight made by man took place less than 100 years ago on

the windswept dunes of Kitty Hawk, North Carolina, is a true testament to man's ingenuity, persistence, and determination.

On December 17, 1903, the Wright Brothers changed the world forever and in three short years we'll be celebrating the 100th Anniversary of that event.

Centennial of Flight Commission

The Centennial of Flight Commission was created by the U.S. Congress in 1998 to advise the President, Congress and Federal agencies on the most effective ways to encourage and promote national and international participation in the commemoration of the centennial of powered flight by our citizens, state and local governments, civic and cultural organizations, the aviation and aerospace industry and their workers, educators and students of all ages.

The Commission itself will maintain an on-line, comprehensive calendar of commemorative events. Its website will also serve as a complete resource on the centennial of powered flight and the history of aviation for the media, educators and their students, and all other organizations wishing to participate in the celebration of the Wright Brothers' historic achievement.

> The web site address is: www.centennialofflight.gov

Aviation World's Fair

In April of 2003, Newport News/Williamsburg Airport in Newport News, Virginia will be the site of a truly unique, one-time event.

Aviation World's Fair 2003, presented by Kallman Worldwide, will honor the achievements of flight from the Wright Brothers to construction of the International Space Station and beyond. The fair will feature pavilions highlighting the aviation firsts of many nations.

In addition to the Wright Brothers, Aviation World's Fair will feature exhibits on helicopters, soaring, ballooning, ultralights, general aviation, commercial aircraft, supersonic flight, women in aviation and space flight. The event will feature flying

displays of aircraft from the early days of flight through World Wars I

and II and the modern era.

This is going to be a huge event and more details will be forthcoming.

To learn more, visit the web site: www.aviation-worlds-fair.com



VIRGINIA AVIATION **MUSEUM CALENDAR**

November 16, 2000 - 7:00 p.m. **Guest Speakers Series**

M. Neely Young will describe his experiences flying B-17s and B-24s with the 8th Air Force, including a mission supporting the D-Day invasion. (no charge).

November 18, 2000 - 5:30 p.m. **VAHS Hall of Fame Induction** Ceremony

For more information or to make reservations please call (804) 222-8690.

December 17, 2000 - 10:00 a.m. - noon. First Flight Celebration

Special hands-on activities and films honoring the first manned, powered, controlled flight made by the Wright Brothers on December 17, 1903. See flying replicas of the Wright Brother's 1900 kite, 1901 and 1902 gliders. (included in museum admission).

Guest Speakers Series programs begin at 7:00 p.m. in the Benn Theater. Please call (804) 236-3622 to confirm date and time.

The Virginia Aviation Museum is open daily from 9:30 a.m. to 5:00 p.m. Admission is \$5.00 for adults, \$4.00 for seniors and \$3.00 for youth. It is located at Richmond International Airport, 5701 Huntsman Road, Richmond International Airport, Virginia 23250. For further information on events and schedules, call (804) 236-3622.



Aviation Education Corner

Experiment with a Cup With Water

Ask the Question: "Will Newton's Third Law apply to a force created by water, instead of air?"

- 1. Have students copy the question onto their Experiment Log.
- 2. Ask them to write down one hypothesis based upon what they've learned previously and/or what they know from their own experience.
- 3. Discuss their answers.
- 4. Ask students to propose steps for an experiment to prove or disprove the hypothesis. Lead them to the following:
- •Punch three equidistant holes around the top of the cup and tie string through them so that the cup can be suspended and held in a somewhat level manner. See diagram.
- •Punch a hole the diameter of a straw near the bottom of one side of the cup. It is recommended that the hole punching be done in advance. It is also recommended that the straw fit snugly into the opening.
- •Hang the cup over a bucket or sink and have handy a container of water to pour into the cup.
- •Pour the water into the cup while holding your thumb over the opening. Release your thumb and observe. As the water rushes out of the opening at the bottom of the cup, the cup will move slightly in the opposite direction of the water's flow.
- 5. Have the students write down the procedure as well as any materials that will be needed.
- 6. Do the experiment a couple of times and have students individually record their observations.
- 3. Design an experiment.

MATERIALS & PROCEDURES (What steps will I take to do this experiment? What things will I need?)

4. Perform the experiment.
OBSERVE AND RECORD
DATA

(What information did I gather during this experiment?)

Materials:

string, cup with holes, water in container, sink/bucket, piece of straw 1/2" in length Procedure:

- 1. Gather and set up materials.
- 2. Make sure the cup is firmly hung and still.
- 3. Hold cup and block hole at bottom of cup while filling cup with water.
- 4. Gently remove block from hole.
- 5. Observe and record.
- 6. Repeat steps 3-5.

After gently releasing the water from the cup, there was a slight sway. The water poured out the hole in a steady stream with some force. The cup then moved slightly in the opposite direction of the water. It stayed in that position for a while and then as the water started coming out more slowly it also slowly moved back to its original position.

- 7. Discuss ways for them to organize and present the data.
- 8. Allow time for students to write their own conclusion based upon what they observed.
- 9. Have students share their conclusions in partners or small groups.
- 10. Model the type of conclusion you wish students to create using the Key or creating a conclusion of your own.

Experiment Log - Key

Experiment: Cup with Water

Steps

1. State the Problem QUESTION

(What do I want to know?)

2. Form a hypothesis PREDICTION (What do I think is going to happen?)

Data

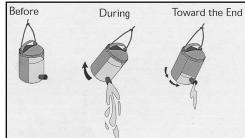
Does water act the same way as air according to Newton's Third Law?

(Will the water draining out of the can cause the can to react?)

Will Newton's Third Law apply to a force created by water instead of air? I think the water will not act in the same way as the air. I think the water will just drain out of the cup.

As the water pours out of the hole, I think the cup will tip in the opposite direction from the force of the flow.

5. Organize and analyze data. (Make a graph, chart, picture or diagram.)



6. Draw conclusions.
(What do my results mean?
Was my hypothesis right or
wrong? Can I explain why?)

As soon as the water was allowed to pour out, the cup moved from its perpendicular position to a slight leaning position. It leaned in the opposite direction from the way the water was pouring out. This means that water has the same effect on objects as air does.

It stayed in that position for a while and then as the water started coming out more slowly it also slowly moved back to its original position.

Just like Newton's Third Law, the water's actions of draining out of the hole caused the cup to react by moving in the opposite direction. My hypothesis was incorrect. I thought that Newton's Third Law only worked with air, but it also works with water. This means that water acts and causes reactions the same way as air.

NASA CONNECT 2000-2001 Schedule

The popular NASA CONNECT program which emphasizes the national mathematics and science standards, the information literacy standards for student learning, and the national computer/ technology standards for grades 4-8 has begun its 2000-2001 season.

Components of the program include a 30-minute instructional program, delivered via television and the Internet, a corresponding lesson guide FREE to registered eductors, and a web-based component supporting each lesson.

Program 1: Measurement, Ratios, and Graphing: 3,2,1...Crash!

Thursday, October 19, 2000, 11-11:30 a.m. ET

Crashing planes, skidding tires, and blasting water, NASA engineers work to improve airplane performance and safety.

Program 2: Geometry and Algebra: Glow with the Flow

Thursday, November 16, 2000, 11-11:30 a.m. ET

NASA aerospace engineers use scale models to see how air flows and why materials glow under wind tunnel conditions.

Program 3: Patterns, Functions and Algebra: Wired for Space

Thursday, February 15, 2001, 11-11:30 a.m. ET

Without the aid of fuel, NASA researchers are developing new ways to propel a spacecraft already in orbit.

Program 4: Data, Analysis and Measurement: Ahead, Above the Clouds

Thursday, March 15, 2001, 11-11:30 a.m. ET

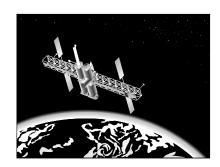
Predicting severe weather, tracking clouds, and monitoring pollutants in the air, NASA engineers and scientists are developing technologies to collect data that will help them better understand Earth's climate.

Program 5: Functions and Statistics: International Space Station (ISS): Up to

Thursday, April 19, 2001, 11-11:30 a.m. ET

Ground-based research + space-based research = true science as international researchers anticipate working together on board the ISS.

For more information visit: http://edu.larc.nasa.gov/connect/



Aviation & Space



Web Sites

Aviation World's Fair 2003 www.aviation-worlds-fair.com

Centennial of Flight Commission www.centennialofflight.gov

NASA CONNECT http://edu.larc.nasa.gov/connect/

NASA Educational Workshops http://www.nsta.org/programs/new.htm

NASA's "Why" Files http://whyfiles.larc.nasa.gov.

National Headquarters - Civil Air Patrol www.capnhq.gov

SCIENCE MUSEUM OF VIRGINIA CALENDAR

IMAX FILMS:

Amazing Journeys - thru Jan. 12 Fantasia 2000 - thru Dec. 31

MULTIMEDIA SHOWS

Journey into the Living Cell - thru Feb. 28 The Night Sky - thru Dec. 31

EXHIBITIONS - thru Jan. 6

The Giftbearers: Brenda Morris' hand-crafted, one-of-a-kind dolls, interpret holiday traditions through the centuries.

LIVESKY: Informal "live" planetarium presentation of the month's celestial events. Third Friday of every month.

SKYWATCH: Third Friday of every month (weather permitting) on the front lawn.

24-Hour Information: (804) 367-0000 Box Office: (804) 367-1080 24-Hour Skywatch Information: (804) 367-8277 24-Hour TDD Information: (804) 367-9760 General Information - TDD: (804) 367-6552 Group Scheduling: (804) 367-6552 Home Page: http://www.smv.org

VIRGINIA AIR AND SPACE CENTER CALENDAR

VISITING EXHIBITS:

LOOPING THE LOOP: POSTERS OF EARLY FLIGHT- thru January 7

STAR TREK: FEDERATION SCIENCE - January 27-April 30, 2001

IMAX FILMS:

SOLARMAX - thru January 5 MICHAEL JORDAN TO THE MAX - thru January 25 CIRQUE DU SOLEIL: JOURNEY OF MANthru January 25

SIGMA SERIES LECTURES:

Galileo Mission to Jupiter - Torrance Johnson - Tuesday, December 5 at 7:30 p.m.

ACTIVITIES:

FALL FLIGHT WEEKENDS - Sat. & Sun. noon - 4:00 p.m. thru Nov. 26. Experience the ups and downs of flight hands-on.

Call (804) 727-0900 for showtimes Visit the Center's Home Page: http://www.vasc.org

Visit the Teacher Resource Center Home Page:

http://seastar.vasc.mus.va.us

Calendar of Events

Nov. 10-11, 2000 Virginia Association of Science

Teachers Conference - Hotel Roanoke, Roanoke, Virginia

Dec. 17, 2000 97th Anniversary of Powered,

Controlled Flight

December 17, 2000 Wright Brothers' "First Flight"

Ceremony at Wright Brothers National Memorial, Kill Devil Hills. Celebrating the 97th anniversary of the first powered flight. First Flight Society, First Flight Centennial Commission, Wright Brothers National Memorial & First Flight Centennial Foundation.

www.firstflight.org

www.firstflightnc.com 252-441-7430

December 13, 2000 Virginia Aviation Board Meeting will

be held at the Hilton Richmond Airport beginning at 9:00 a.m. For more information call (804) 236-3637.

For more events check out:

http://www.doav.state.va.us/calendar.htm.

Aviation Education Supporters:

VASEF projects are funded by our membership fees and by donations from our member organizations. We would appreciate your support through membership in our organization.

Regular Membership \$25.00 annually (July - Dec. \$12.50)

Non-Profit Organization \$25.00 annually (July - Dec. \$12.50)

Corporate Membership \$100.00 annually (July - Dec. \$50.00)

New Member Renewal

Date:

Name:

Name of Organization:

Occupation:

Address:

City: _____ State ____ Zip ____

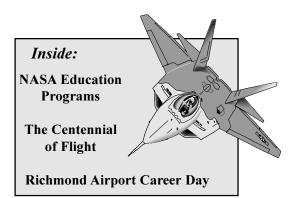
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